Reconsideration for the allowance of Claims 11-18 under 35 U.S.C. 103(a) as being unpatentable over Advocate, Jr. et al. (U.S. 5,904,156) in view of Aigo (U.S. 5,014,727), is requested, in light of the following arguments.

Briefly, applicants wish to point out the claimed invention which is a novel and cost-effective process for stripping and cleaning organic coatings. The removal of residual cohesive materials from sidewalls formed in etched metallic layers of dense submicron topography on semiconductor substrates. Cleaning is accomplished to a plurality of substrates contained in a substrate carrier and immersed in a liquid chemical.

While Advocate et al. teaches a method of removal of a film of photoresist, which can be utilized in semiconductor technology and particularly for the removal of photoresist from the vicinity of C4 structures. Advocate's method is directed towards stripping photoresist from a substantially planar object with C4 structures as opposed to the cleaning of organic residue from pockets and sidewalls which are analogous to narrow spaced and deep walled canyons.

While Aigo teaches a manifold with a plurality of pressurized tubes, each tube with a fine mesh filter disposed at each end. The egress of gas into the stripping solution generates a continuous stream of bubbles rising from the bottom to the top of the solution, it is not simply the combination of Advocate and Aigo, it is the total combination of elements of the claimed invention.

This contrasts with the claimed invention in which a method for removing cohesive materials from substrates as claimed in amended Claim 11 and 15, lines 1-15 and 29-43 which claims a method for removing cohesive coatings from a plurality of substrates having dense submicron topography containing prominent sidewalls, comprising the steps of: placing a quartz gas distribution plate, connected to a pressure regulated gas supply, in an open tank filled with a liquid chemical; submerging and placing a substrate carrier, containing a plurality of substrates, on the quartz gas distribution plate so that the substrates are aligned and in a vertical position relative to the quartz gas distribution plate; intermittently changing a pressure value of the regulated gas supply to generate a turbulent vertical agitation, the distribution plate directs gas bubbles between and parallel to each surface of the substrates aligned thereabove, the turbulent vertical agitation providing a chemical-mechanical scrubbing; removing said substrate carrier from said chemical liquid.

The method of claims 11 and 15 , and the manner as illustrated in Figs. 2 are neither taught nor suggested by the prior art.

Furthermore, it is respectfully suggested that the combination of these references cannot be made without reference to Applicant's own claimed invention. None of the reference address the problem of reducing the cohesiveness between the photoresist and sidewalls formed in etched metallic layers of semiconductor wafers. Claims 11-18 are believed to be novel and patentable over these various references because there is not sufficient basis for concluding that the combination of claimed elements would have been obvious to one skilled in the art. That is to say, there must be something in the prior art of line of reasoning to suggest that the combination of these various references is desirable. We believe that there is no such basis for the combination. We therefore

request Examiner Kornakov to reconsider his rejection in view of these arguments and the amendments to the Claims.

We have reviewed the related art references made of record and have determined that none of these suggest the present claimed invention.

Attached hereto is a marked-up is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned.

"Version with markings to show changes made."

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend claims 11 - 17 as follows:

11. (THRICE AMENDED) A method for removing [organic materials] cohesive coatings from a plurality of substrates having [surface patterns with] dense submicron topography containing prominent sidewalls, comprising the steps of:

[providing an open tank containing a liquid chemical;]

[providing] placing a quartz gas distribution plate, connected to a pressure regulated gas supply, in a tank containing a liquid chemical [submerged and supported horizontally by bottom of said tank];

[providing a pressure regulated gas supply means connected to said gas distribution plate;]

[providing a substrate carrier containing a plurality of substrates;]

submerging and [resting] placing said substrate carrier containing a plurality of substrates on said gas distribution plate so that [liquid chemical wets all surfaces of said substrates that are supported vertically within said substrate carrier] said substrates are aligned and in a vertical position relative to said quartz gas distribution plate;

[said gas distribution plate generates and directs gas bubbles between and parallel to each surface of said substrates positioned thereabove, said gas bubbles] intermittently changing a pressure of said pressure regulated gas

preferred not continuous

supply for generating a turbulent vertical agitation, said quartz gas distribution plate directs gas bubbles between and parallel to each surface of said substrates aligned thereabove, said turbulent vertical agitation providing a chemical-mechanical scrubbing[.];

removing said substrate carrier from said chemical liquid.

12. (THRICE AMENDED) The method according to claim 11wherein said quartz gas distribution plate having [a top surface separated from a bottom surface, said bottom surface having a sinuous groove with a flexible tubing urged into and guided by said sinuous groove, each parallel leg of said sinuous groove having a multiplicity of holes formed through to said top surface, said holes are used as a drill jig guide for drilling prescribed diameter holes in each leg of said flexible tubing, said tubing having a first end connected to a gas supply means and a second end that is capped] distribution means for generating an array of gas bubbles, each row of said array corresponding to a substrate position of said substrate carrier.

13. (THRICE AMENDED) The method according to claim 11 wherein said [quartz gas distribution plate having a plurality of elongated slot openings extending from the top surface to the bottom surface contiguously disposed between said parallel segments, said slot openings traversing length of said plate, said slot openings facilitate tank cleaning and maintenance] said pressure

regulated gas supply is nitrogen gas.

14. (THRICE AMENDED) The method according to claim 11 wherein using a quartz gas distribution plate [eliminates] is compatible with aggressive chemicals for removing [photoresist] cohesive residues in metal sidewalls that are coated with polymer.

15. (THRICE AMENDED) A method for [removing] stripping cohesive photoresist from a plurality of semiconductor wafers having [surface patterns with] dense submicron topography containing prominent sidewalls, comprising the steps of:

[providing an open tank containing a liquid chemical;]

[providing] horizontally placing a quartz gas distribution plate, connected to a pressure regulated gas supply, in a tank containing a photoresist stripping chemical [submerged and supported horizontally by bottom of said tank];

[providing a pressure regulated gas supply means connected to said gas distribution plate;]

[providing a wafer cassette containing a plurality of wafers;]

submerging and [resting] placing a [said] wafer cassette containing a plurality of wafers on said gas distribution plate so that [liquid chemical wets all surfaces of said wafers that are supported vertically within said wafer cassette] said wafers are aligned and in a vertical

position relative to said quartz gas distribution plate;

[said gas distribution plate generates and directs gas bubbles between and parallel to each surface of said wafers positioned thereabove, said gas bubbles] alternate changing a gas pressure of said pressure regulated gas supply for generating a turbulent vertical agitation, said quartz gas distribution plate directs gas bubbles between and parallel to each surface of said wafers aligned thereabove, said turbulent vertical agitation providing a chemical-mechanical scrubbing[.];

removing said substrate carrier from said chemical liquid.

16. (THRICE AMENDED) The method according to claim 11 wherein said quartz gas distribution plate having [a top surface separated from a bottom surface, said bottom surface having a sinuous groove with a flexible tubing urged into and guided by said sinuous groove, each parallel leg of said sinuous groove having a multiplicity of holes formed through to said top surface, said holes are used as a drill jig guide for drilling prescribed diameter holes in each leg of said flexible tubing, said tubing having a first end connected to a gas supply means and a second end that is capped] gas distribution means for generating an array of bubbles, each row of said array corresponding to a wafer position contained in said wafer cassette.

17. (THRICE AMENDED) The method according to claim 11 wherein said [quartz gas distribution plate having a plurality of elongated slot openings

extending from the top surface to the bottom surface contiguously disposed between said parallel segments, said slot openings traversing length of said plate, said slot openings facilitate tank cleaning and maintenance] pressure regulated gas supply is nitrogen gas. cl 13

18. (THRICE AMENDED) The method according to claim 11 wherein using a quartz gas distribution plate [eliminates] is compatible with aggressive chemicals for removing cohesive [photoresist] residues in metal sidewalls that are coated with [polymer] photoresist. almost same as cl 14